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Threat Level

Red

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THREAT ADVISORY

ATTACK REPORT

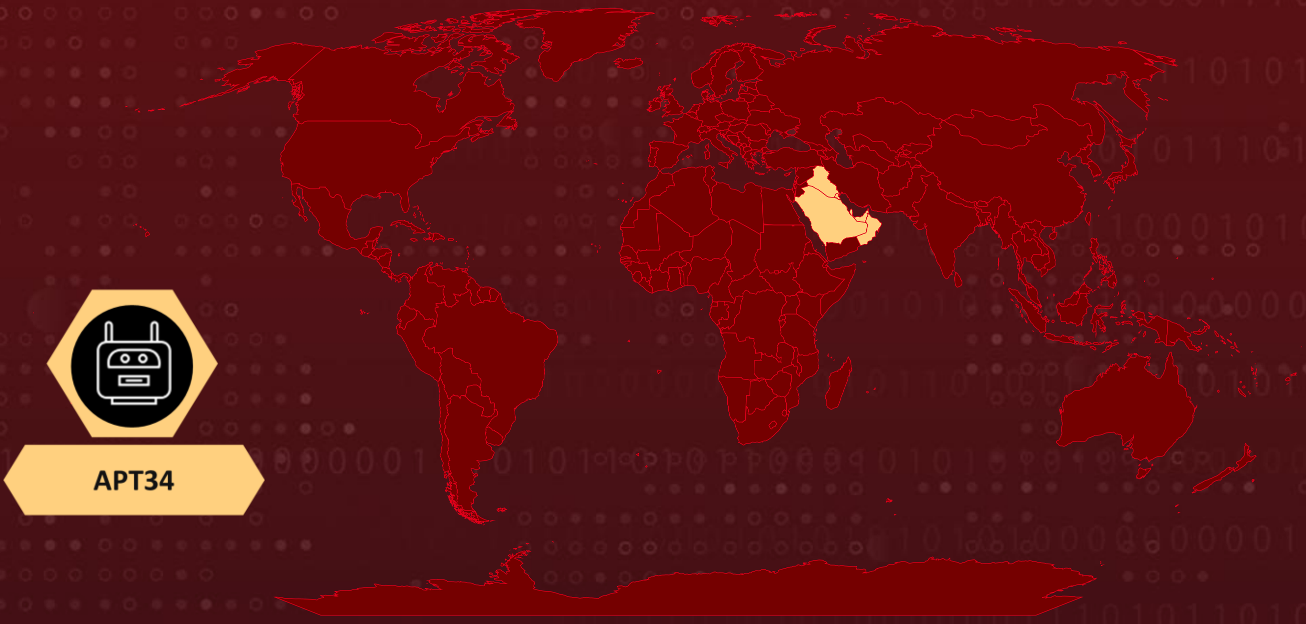
APT34 Tightens Cyber Espionage Grip on Gulf with Kernel Exploitation

Date of Publication	Admiralty Code	TA Number
October 14, 2024	A1	TA2024392

Summary

Attack Discovered: 2024
Targeted Countries: United Arab Emirates (UAE) and the broader Gulf region
Targeted Industries: Governmental Entities and Critical Infrastructure
Malware: StealHook
Actor: APT34 (aka Earth Simnavaz, Helix Kitten, Twisted Kitten, Crambus, Chrysene, Cobalt Gypsy, TA452, IRN2, ATK 40, ITG13, DEV-0861, EUROPIUM, Hazel Sandstorm, Scarred Manticore, Evasive Serpens, Yellow Maero, Storm-0861, OilRig)
Attack: APT34, also known as Earth Simnavaz, the Iranian state-sponsored hacking group, has been seen exploiting a vulnerability tracked as CVE-2024-30088 in the Windows Kernel. This flaw is being used to target organizations in the United Arab Emirates and the broader Gulf region. The attackers exploit a vulnerable web server to upload a web shell, which allows them to execute remote code and run PowerShell commands. As part of this attack, APT34 has deployed a new backdoor called 'StealHook' to facilitate data exfiltration.

Attack Regions



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CVE

CVE	NAME	AFFECTED PRODUCT	ZERO-DAY	CISA KEV	PATCH
CVE-2024-30088	Windows Kernel Elevation of Privilege Vulnerability	Windows Kernel	✗	✗	✓

Attack Details

#1 The Iranian state-sponsored threat group APT34, also known as Earth Simnavaz, has recently been observed exploiting a critical vulnerability, CVE-2024-30088, within the Windows Kernel as part of a highly targeted cyber espionage campaign. This operation is focused on compromising governmental and critical infrastructure networks in the United Arab Emirates (U.A.E.) and the broader Gulf region, highlighting the group's persistent focus on geopolitical espionage.

#2 The attack chain begins with the infiltration of vulnerable web servers, where the group deploys a web shell to gain remote access and execute arbitrary commands. Once inside the target network, APT34 utilizes the ngrok remote management tool to maintain persistence and facilitate lateral movement, enabling them to reach critical assets such as the Domain Controller. By exploiting CVE-2024-30088, a Windows Kernel Elevation of Privilege vulnerability, the attackers are able to escalate privileges, securing deeper access to sensitive systems and data.

#3 The attackers employ sophisticated password filter manipulation techniques to capture plaintext passwords, notably utilizing an exfiltration tool called StealHook, which sends stolen credentials as email attachments. By leveraging legitimate Exchange accounts for these emails, they complicate detection efforts, making their activities appear credible. This approach not only facilitates the theft of sensitive credentials but also allows the attackers to maintain a persistent foothold within the compromised network.

#4 The group's operations employ a sophisticated blend of IIS-based malware, PowerShell scripts, and .NET-based tools, ensuring that their malicious activities remain covert by blending into normal network traffic. These tactics, combined with their exploitation of critical vulnerabilities like CVE-2024-30088, demonstrate Earth Simnavaz's ability to penetrate deeply into high-value networks with relative stealth, posing a significant threat to the region.

#5 Given the advanced tactics employed by Earth Simnavaz and the strategic importance of their targets, it is imperative for organizations in the Gulf region to take immediate action. Timely patching and vigilance in monitoring network traffic for unusual activity will be crucial in defending against ongoing and future cyber espionage operations orchestrated by this highly capable adversary.

Recommendations

Apply Patch: Install the security patch provided by Microsoft to address the CVE-2024-30088 vulnerability. This patch closes the security gap that allows attackers to exploit vulnerability.

Network Segmentation: Isolate sensitive systems such as Domain Controllers and servers with critical data from less secure areas of the network. This minimizes the impact of lateral movement if attackers gain initial access.

Implement Zero Trust Architecture: Adopt a Zero Trust security model, where access to resources is continually verified, and trust is never implicitly granted. Use identity and access management (IAM) policies to strictly control user and device permissions.

Monitor the Registry: Vigilantly track changes to the Notification Packages registry key located at HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Control\Lsa. Implement auditing through Group Policy to log any unauthorized modifications to password filter DLLs. Maintain a list of trusted DLLs, and regularly check for unexpected changes

Implement Behavioral Analysis: Deploy advanced security solutions that employ behavioral analysis and anomaly detection to identify unusual patterns of activity indicative of malware presence. This proactive approach can help catch sophisticated threats before they fully compromise your systems.

Potential MITRE ATT&CK TTPs

TA0042 Resource Development	TA0001 Initial Access	TA0002 Execution	TA0003 Persistence
TA0004 Privilege Escalation	TA0005 Defense Evasion	TA0009 Collection	TA0010 Exfiltration
TA0011 Command and Control	T1588 Obtain Capabilities	T1588.006 Vulnerabilities	T1190 Exploit Public-Facing Application
T1059 Command and Scripting Interpreter	T1059.001 PowerShell	T1572 Protocol Tunneling	T1102 Web Service

T1132 Data Encoding	**T1132.001** Standard Encoding	**T1041** Exfiltration Over C2 Channel	**T1556** Modify Authentication Process
T1556.002 Password Filter DLL	**T1068** Exploitation for Privilege Escalation	**T1105** Ingress Tool Transfer	**T1078** Valid Accounts
T1078.003 Local Accounts	**T1505** Server Software Component	**T1505.003** Web Shell	**T1048** Exfiltration Over Alternative Protocol
T1053 Scheduled Task/Job	**T1070** Indicator Removal	**T1112** Modify Registry	**T1074** Data Staged
T1047 Windows Management Instrumentation			

Indicators of Compromise (IOCs)

TYPE	VALUE
SHA256	db79c39bc06e55a52741a9170d8007fa93ac712df506632d624a651345d33f91, a24303234e0cc6f403fca8943e7170c90b69976015b6a84d64a9667810023ed7, 6e4f237ef084e400b43bc18860d9c781c851012652b558f57527cf61bee1e1ef, b3257f0c0ef298363f89c7a61ab27a706e9e308c22f1820dc4f02dfa0f68d897, abfc8e9b4b02e196af83608d5aaef1771354b32c898852dff532bd8cfd2ce59d, 43c83976d9b6d19c63aef8715f7929557e93102ff0271b3539ccf2ef485a01a7, ca98a24507d62afdb65e7ad7205dfe8cd9ef7d837126a3dfc95a74af873b1dc5, 7ebbeb2a25da1b09a98e1a373c78486ed2c5a7f2a16eec63e576c99efe0c7a49, c0189edde8fa030ff4a70492ced24e325847b04dba33821cf637219d0ddff3c9, 6d8bdd3e087b266d493074569a85e1173246d1d71ee88eca94266b5802e28112, 27a0e31ae16cbc6129b4321d25515b9435c35cc2fa1fc748c6f109275bee3d6c,

TYPE	VALUE
SHA256	54e8fbae0aa7a279aaedb6d8eec0f95971397fea7fcee6c143772c8ee6e6b498, 1169d8fe861054d99b10f7a3c87e3bbbd941e585ce932e9e543a2efd701deac2, af979580849cc4619b815551842f3265b06497972c61369798135145b82f3cd8, 1d2ff65ac590c8d0dec581f6b6efbf411a2ce5927419da31d50156d8f1e3a4ff, abfc8e9b4b02e196af83608d5aaef1771354b32c898852dff532bd8cfd2ce59d, 98fb12a9625d600535df342551d30b27ed216fed14d9c6f63e8bf677cb730301, edfae1a69522f87b12c6dac3225d930e4848832e3c551ee1e7d31736bf4525ef, Ca98a24507d62afdb65e7ad7205dfe8cd9ef7d837126a3dfc95a74af873b1dc5

Patch Link

https://msrc.microsoft.com/update-guide/vulnerability/CVE-2024-30088

References

https://www.trendmicro.com/en_us/research/24/j/earth-simnavaz-cyberattacks-uae-gulf-regions.html

https://www.hivepro.com/threat-advisory/microsofts-june-2024-patch-tuesday-addresses-49-vulnerabilities/

What Next?

At **Hive Pro**, it is our mission to detect the most likely threats to your organization and to help you prevent them from happening.

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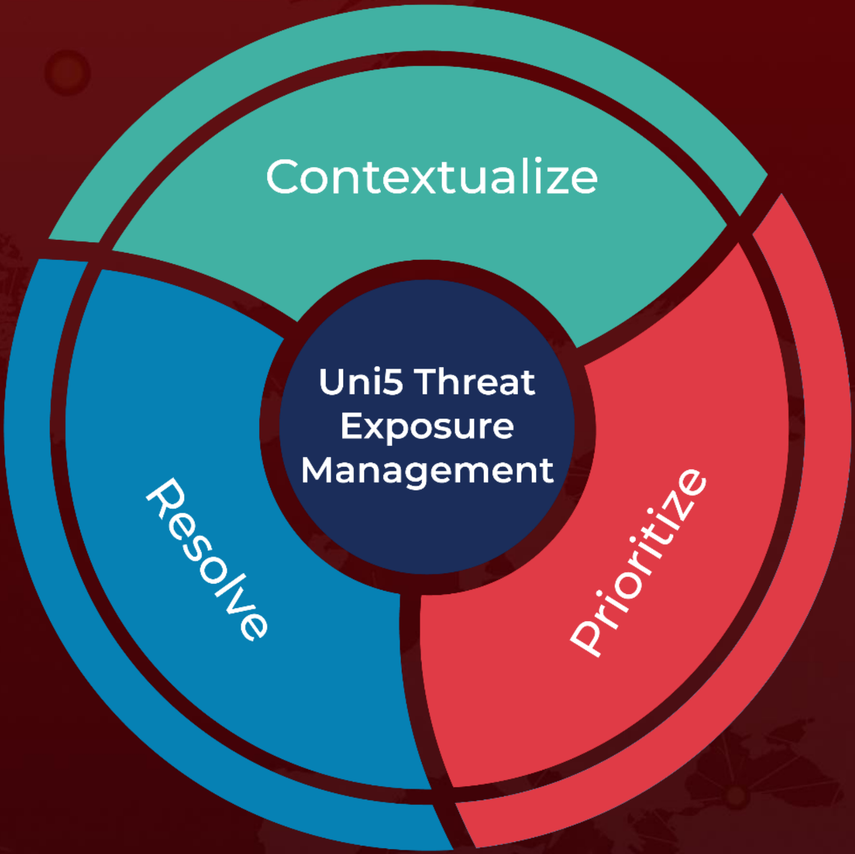

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